EFFECTIVE TAX RATE

In

Direct Capitalization

Example using

Direct Capitalization to estimate value

and using

Effective Tax Rate in the Capitalization Rate instead of Real Estate Tax as a line item expense.

for the following examples: INCOME

Potential Gross Income (PGI)		$70,000
-V&C: Vacancy and Collection <u>Allowance</u> 5.0%		3,500
Effective Rental Income		66,500
+ Reimbursements (if lease requires CAM reimb. By tenants to owner)		1,800
+Other Income (stg, parking, vending)		5,800
=**Effective Gross Income after other & Reimbsmts** (**EGI**)		74,100

-Less Owner's **Operating Expenses** (examples)

Real Estate Tax*	**3,000**	
Insurance	900	
Maintenance and Repairs	1,500	
*Common Area Maintenance (CAM)**	*2,000**	
Utilities	5,000	
Promotion, Advertising	500	
Management 10% EGI	7,230	
Legal and Accounting	1,200	
Other, Trash Collection, pest control, etc.	800	
Total Operating Expenses		22,130

Reserves for Replacements (short life items; examples)

Roofing $ 50,000 /10yr	$5,000		
Painting 60,000/ 10	6,000		
HVAC 24,000/ 8	3,000		
Plumbing 15,000 / 15	1,000		
Carpeting 12,000 / 6	2,000		
Appliances 16,000 / 8	2,000		
Total Reserves		19,000	
=Total **Operating Expenses & Reserves**			41,130
Net Operating Income NOI, or I, or Io			**32,970**

Side notes:

- V&C may be actual if available, but should look forward (buyer thinking)

- Reimbursements from tenants, if any, depending on terms of leases.

- **For assessing, taxes unknown, so use zero; then add effective tax rate to the capitalization rate to calculate value.**

- Paid by owner, but all or part reimbursed from tenant. Sometimes not all reimbursed because of vacancy or all tenants not under the same lease provisions.

- Comment re valuation without reserves for replacement: include if buyers in the market do in their forecasts of income when purchasing an income property. Often depends on type and size. Required by lenders.

- Net Operating Income is BEFORE debt service (principal and interest) on loans. To value the property as fee simple without mortgage or contract loan.

Application of Direct Capitalization:

A ratio model is used using Rate as discussed above derived by the foregoing methods.

| **Value = Income / Rate** | Income = Rate * Value | **Rate = Income / Value or Sales Price** |

First, derive the income to be used from subject and comparable rental – lease information.
Second, derive the overall rate to be used from the market, sales producing income at the time
of sale (must be similar building ratio, expense ratio, remaining economic life, risk, property
type, age/condition, buyer/investor desirability, etc.)
Third, apply in the V+I/R model.

1. Assume subject experience and market rentals indicate a PGI of 70,000, a 5%
   vacancy, and a Net Operating income of $32,970 as shown on the prior example
   of calculating NOI.   From market information of similar properties with similar
   leases (i.e. similar terms, conditions, features, site ratios, expense ratio,
   remaining economic life,)

2. Derive an appropriate overall Rate from the market:

Derivation of Overall Rate (R or Ro) from market information.*					
Property	**Sales Price**	**Sale Date**	**Net Op. Income**	**Ro [Overall Rate]**	
1	$250,000	3 mo ago	$28,500	.1143 or	11.40%
2	$200,000	8 mo ago	$21,000	.1050 or	10.50%
3	$325,000	4 mo ago	$36,400	.1120 or	11.20%

Analyst concludes appropriate rate is 0.110, or 11.0%

3. Calculate value indication amount by Direct Capitalization by applying the Rate
   to the estimated subject net operating income:

Value = Income/Rate: Net Operating Income **$32,970** divided by Overall Rate **11.0%** =
            32,970 / .11   = **$299,727 rounded to $300,000**.

* NOTE 1: comparable properties should have the same land to building ratio, expense ratio and
remaining economic life; if these items are significantly different in the comparables as compared to the
subject, mismatch can result and the extracted rate undependable or misleading.

* NOTE 2: Comparable and competitive listings may also be included to indicate upper limits of
price and lower limits of rates to help bracket the conclusion for the subject.

Direct Capitalization to value an income producing property

Using the foregoing example, Estimating value for 'ad valorem' real estate taxes:

The real estate tax amount is <u>not</u> known (because we are estimating value which is necessary to calculate the real estate tax amount) but the effective tax rate can be found and is knowable.

<u>Assume an effective tax rate of .01510</u>   *(more about where the effective tax rate number may be found or calculated later in these pages)*

Real estate tax in the foregoing calculation of net operating income was $3,000, so **the net operating income without including real estate tax in the expenses would be $37,400.**

The comparable sales from which the overall rate derived are:

Property	Sales Price	Sale Date	Net Op. Incm w/o tax	Ro [Overall Rate]	
Derivation of Overall Rate (R or Ro) from market information.*					
1	$250,000	3 mo ago	$28,500	.1143 or	11.43%
2	$200,000	8 mo ago	$21,000	.1050 or	10.50%
3	$325,000	4 mo ago	$36,400	.1120 or	11.20%

Analyst concludes appropriate basic rate is 0.110 or 11.0%; PLUS the ETR of 0.01510 resulting in a loaded capitalization rate of .1271 .

So the value for ad valorem taxation would be*

$$V = I / R ; \quad I = (32{,}970 + 3{,}000* = \textbf{35{,}970}) \text{ and } R = 0.1271; \text{ so}$$

35,970/ .1271= $283,005 rounded to $283,000.

* Removing the above line-item real estate tax expense, thus raising the indicated Net Operating Income.

Note: The value calculation is not the same as the foregoing $300,000 which included actual real estate tax as a line item expense because the actual tax of $3,000 is only 1% of the value estimate rather than the effective tax rate of 1.51%

EFFECTIVE TAX RATE – where do you get it?

The Department of Revenue, in its publication "Assessment Procedures Manual" Part Two, Chapter 1, Approaches to Value, discusses **effective tax rate**. (see that publication (pages 2.1.33-38):

In Arizona, there are two ways of developing the effective tax rate:

1.   **the direct method**
2.   **the market comparison method.**

Taking a look at each:

1. The direct method uses the official overall tax rate of the taxing jurisdiction in which the property is located and multiplies that rate by the assessment ratio of that subject property.

As an example:

Tax Rate x Assessment Ratio = Effective Tax Rate   (ETR)

Assessment Ratio and Assessed Value

In addition to determining the value, the Assessor must identify the appropriate legal class to be applied to the property. The legal class ratios are used to calculate the assessed values of the property. The following are the most common legal classes, property uses, and their assessment ratios:

Legal Class	Property Use	Tax Year	Assessment Ratio
1	Commercial and Industrial Please consult these Arizona Revised Statutes: A.R.S. § 42-12001 and A.R.S. § 42-15001	2001 to 2005 2006 2007 2008 2009 2010 2011 to 2012 2013 2014 2015 2016	25.0% 24.5% 24.0% 23.0% 22.0% 21.0% 20.0% 19.5% 19.0% 18.5% 18.0%
2	Vacant and all other property not included in other classifications Please consult these Arizona Revised Statutes: A.R.S. § 42-12002 and A.R.S. § 42-15002	2001 to 2015 2016	16.0% 15.0%

Continue to calculation of ETR…..

Tax Rate (per county treasurer) **x   Assessment Ratio   = Effective Tax Rate**

0.12587   x   0.185   = 0.0233 or 2.33%

2. The market comparison method divides the most current year's taxes for a comparable property **by that year's Full Cash Value for the property**. Similar properties located in the same taxing jurisdiction as a subject property should yield similar ETRs.

For example, using information from treasurer (r.e.tax) and assessor's (full cash value) :

Abernathy Business Park;

Property APN	2014 FCV FCV	As'ment Ratio [1]	2014 R E Tax	Effective Tax Rate ETR .
101050720	$642,500	0.21	$19,940	.03104
101050710	520,200	0.21	$16,142	.03103
101050750	651,000	0.21	$19,940	.03063
10105077E	902,000	0.21	$27,043	.02998
Mean	*678,925*		*$20,766*	*.03067*

21% in 2010;   20 % in 2011

Taxes ÷ Full Cash Value = Effective Tax Rate   (ETR)

$20,766 ÷ $678,925 = 0.03067 or 3.06% Overall

Further, a third method is also logical:

3. Appraiser's method, i.e. normally used in the fee appraisers' practice

the effective tax rate is simply the real estate tax amount divided by the sales price of a property (same concept as #2 above, but using sales price rather than FCV)

<div align="center">

Effective tax rate ETR = ($ SP) / ($ RE Tax).

</div>

For example,

> **Taxes ÷   Value evidenced by Sales Price =   Effective Tax Rate (ETR)**
>
> Example: $28,776   ÷ $870,000 = 0.0331 = 3.31 % Overall

But, for a broader base of support, it's better to **use a sample similar group of properties** in the same tax and tax rate jurisdiction:

From market sales information, properties of same use as subject

Property	Sales Price	R E Tax	ETR
1	$ 750,000	25,700	.03427
2	660,000	19,700	.03788
3	920,000	23,700	.02576
4	565,000	17,200	.03270
5	1,055,000	23,800	.02256
			Mean ETR =.03063

Other definitions and ETR calculations:

A commonly used definition of Effective Tax Rate is from Barron's Real Estate Dictionary:

Effective Tax Rate

>   The Ad Valorem tax payment compared with the Market Value of the property.
>   Facilitates a comparison of taxes in different jurisdictions that apply different
>   Assessment Ratios.
>   **Example:** Community A applies a 50-mill rate to a 40% assessment ratio. The *effective tax*
>   *rate* is 2% of the market value (50 mills = 5%; 5% x 40% = 2%).

Essentially the same is found in the Dictionary of Real Estate Terms

Next, ETR information from IAAO:

From the International Association of Assessing Officers, IAAO, the definition of Effective Tax Rate is *"…the rate expressing the ratio between the current tax bill and the property value."*

IAAO calculation example:

COMPUTING AN EFFECTIVE TAX RATE

Formula:

Effective Tax Rate = Assessment Ratio x Tax Rate.

Example:
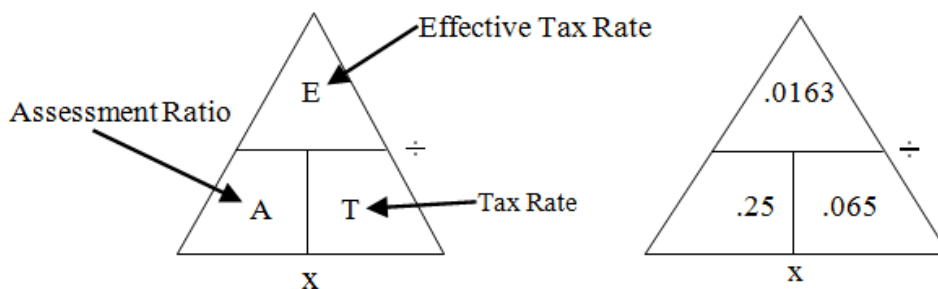
Assessment ratio of 25%
Current tax rate of $6.50/$100

Step 1: Divide $6.50 by $100

$$6.50 \div 100 = .065$$

Step 2: Multiply assessment ratio by the result of Step 1

Effective tax rate of: $.25 \times .065 = .0163$

Another way to look at the formula is to place it in a triangle. The EAT triangle below helps determine what calculations need to be made based on the data available.

From IAAO,   *continued….*

Find the Effective Tax Rate (ETR) expressed as a percentage when the following is known:

Annual Real Estate Taxes:	$8,000,000
Total Market Value:	$400,000,000
Assessment Ratio:	50%
Tax Rate:	4 %
Assessed Value:	$200,000,000

(Note: If your calculator doesn't handle millions, simply drop the same number of zeroes from the numerator and denominator before you divide.)

Find the jurisdiction's effective tax rate when the following is known:

Budget:	$200,000,000
Total Market Value:	$10,000,000,000
Assessed Value:	$2,500,000,000
Tax Rate:	80 Mills

(Note: If your calculator doesn't handle billions, simply drop the same number of zeroes from the numerator (N) and denominator (D) before you divide.)

From IAAO, *continued….*

Reconstructing the Income Statement (as it pertains to the ETR)

f) Real Estate Taxes - are a valid operating expense of property. However, because the ad valorem tax appraiser is appraising the property for the ultimate purpose of determining the amount of ad valorem taxes, the appraiser must not make a deduction for real estate taxes. It is not possible to know the proper amount of real estate taxes until the amount of the assessed value is known. Thus, to make a deduction for real estate taxes, the appraiser would have to pre-suppose the amount of value in order to compute the amount of real estate taxes. The ad valorem tax appraiser circumvents this problem by making no deduction for real estate taxes from the income and instead the appraiser includes the effective tax rate as a component of the capitalization rate for the property. (This is very similar to property depreciation/appreciation discussed previously.)

    1) Proper as an expense under certain conditions, such as appraising property for other than ad valorem tax purposes.

    2) Not proper as an expense, under certain conditions, such as appraising property for ad valorem tax purposes.

From IAAO, *continued….*

Real estate taxes are appropriate expenses of the real estate, however because our appraisal is to be used as the basis for future taxes, we must eliminate property tax as an expense and add the effective tax rate to the overall capitalization rate. Real estate taxes must be eliminated because we do not know how much the real estate tax expense will actually be until we do the property tax appraisal. If we left the real estate tax in the expenses as a legitimate expense, we would have to pre-suppose the value before the appraisal in order to compute the tax.

E. Effective Tax Rate

1. The percentage that annual real estate taxes represent in relation to total property value.   When the level of assessment is 100% of appraised value or market value, the effective tax rate and the tax rate are same. Where assessments are less than 100% (fractional assessments) then the effective tax rate is the ratio of tax rate to assessment level.

2. The effective tax rate can be computed by two methods – the EAT formula and market comparison.

From IAAO, *continued....*

3. EAT equation
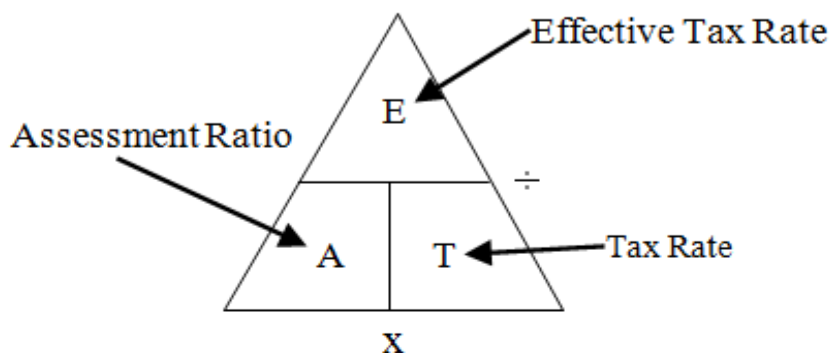
a. **E** = the effective tax rate

The income approach considers real estate taxes as a proper expense. However, the appraiser for ad valorem tax purposes is establishing value for this purpose. Therefore, it would be incorrect to deduct a predetermined amount for real estate tax based on a prior appraisal. Instead, the appraiser for ad valorem tax purposes should not deduct the current real estate tax liability from the operating income but instead develop an effective tax rate and include it as a component in the overall capitalization rate.

b. **A** = the assessment level
(assessment ratio)

The **level of assessment** is the ratio of assessed value to full market value. In many jurisdictions, the assessed value (the taxable value of the property) is equal to the appraised value (full value or market value) of the property. In other jurisdictions, the assessed value is a fractional amount of the appraised value as set by state statutes. When the appraised value is the same as the assessed value, the level of assessment is 100% of the appraised value. When the assessment level is a fractional amount of the appraised value, the level of assessment is less than 100%.

c. **T** = the tax rate

Tax rate structures vary from jurisdiction to jurisdiction. Some jurisdictions refer to the **tax rate** in terms of mill rate or dollars per thousand of assessed valuation, while other jurisdictions refer to the **tax rate** in terms of dollars per hundred of assessed valuation.

4. Market comparison - like a
    recapture rate, the effective tax rate
    can be derived from market sales
    transactions.

    a) Uses IRV equation

    b) Known components of the IRV
        equation are:

        • Real estate taxes

        • Property value

    c) Real taxes divided by the
        market value equals the
        effective tax rate.

The bottom line:

1. When property is being appraised for ad valorem tax purposes the *effective tax rate* must be
    included as a part of the overall capitalization rate.

From The Appraisal of Real Estate, 14ᵗʰ ed. By The Appraisal Institute, page 108.

Taxes

Real estate taxes are levied by municipalities (cities, townships, or counties) and taxing districts (i.e., school, fire, water, and local improvement districts). The taxing body reviews the annual budget to determine the amount of money that needs to be raised. After revenues from other sources (such as sales or income taxes, state or federal revenue sharing, and interest on investments) are deducted, the remaining funds must come from property taxes. Assessing officers estimate the value of each parcel of real estate in the jurisdiction periodically. Real estate taxes are based on the assessed value of real property, hence the term *ad valorem* ("according to value") *taxes.* The assessed value of property is normally based on, but not necessarily equivalent to, its market value. The objective of tax assessment is the equitable distribution of the tax burden based on real property value, but tax assessors do not attempt to develop opinions of value for specific parcels of property for use outside of ad valorem taxation.

The ratio of assessed value to market value is called the *common level ratio* or *assessment ratio.* (The *millage rate* refers to the taxes as a percentage of assessed value.) If, for example, the tax rate is $60 per $1,000 of assessed value and the assessment ratio is 50%, then the annual real estate tax (or effective tax rate) equals 3% of market value:

$$\$60/\$1,000 \times 50\% = 3\%$$

If assessed value is not based on market value, the formula is modified to reflect the difference. An effective tax rate can also be calculated by dividing the total amount of taxes by the market value of the property. Effective tax rates can be used to compare the tax burden on properties.

In jurisdictions where ad valorem real estate tax assessments have an established or implied relationship to market value, appraisal services may be required to resolve tax appeals. In some communities, the trend in real estate taxes is an important consideration. In cities where public expenditures for schools and municipal services have increased, a heavy tax burden can cause real estate values to decline. Under these circumstances, new construction may be discouraged. There may be several tax districts in a metropolitan area, each with a different policy. Understanding the system of ad valorem taxation in an area facilitates the appraiser's analysis of how taxes affect value.